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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/817,155

03/27/2001

Masato Hasegawa

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7590

12/21/2004

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EXAMINER

LEE, SHUN K

ART UNIT

PAPER NUMBER

2878

DATE MAILED: 12/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/817,155

Applicant(s)

HASEGAWA ET AL.

Examiner

Shun Lee

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13-42 and 45-56 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-42 and 45-56 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 May 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Information Disclosure Statement*

1. The information disclosure statement filed on 3 September 2004 does not fully comply with the requirements of 37 CFR 1.98 because: it lacks a legible copy (*i.e.*, the axis labels and portions of the curves are illegible) of each publication or that portion which caused it to be listed. Since the submission appears to be *bona fide*, applicant is given **ONE (1) MONTH** from the date of this notice to supply the above mentioned omissions or corrections in the information disclosure statement. NO EXTENSION OF THIS TIME LIMIT MAY BE GRANTED UNDER EITHER 37 CFR 1.136(a) OR (b). Failure to timely comply with this notice will result in the above mentioned information disclosure statement being placed in the application file with the noncomplying information **not** being considered. See 37 CFR 1.97(i).

### *Specification*

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### *Claim Objections*

3. Claims 52 and 53 are objected to because of the following informalities:

(a) in claim 52, "pigments" on line 2 should probably be --pigment-- (see "a pigment" on line 4 in claim 14); and

(b) in claim 53, "pigments" on line 2 should probably be --pigment-- (see "a pigment" on line 4 in claim 14).

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 13, 34, and 45-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tower *et al.* (US 6,020,628) in view of Grossinger *et al.* (US 5,712,622) and Silvestrini *et al.* (US 4,323,619).

In regard to claims **13** and **45-48**, Tower *et al.* disclose (Figs. 1 and 5) a sensor, having a lens body (12), comprising ceramic (column 2, line 63 to column 3, line 7), a supporting part (16, 60), which supports said lens body (12), and a detection part (*i.e.*,

optically active portion 32 of the electronic device 24), which detects the light that has been transmitted through said lens body (12). While Tower *et al.* also disclose (column 2, line 63 to column 3, line 7) that the lens body is formed from any suitable ceramic or glass such that light of a desired wavelength will pass through the lens body with minimal distortion or attenuation, the sensor of Tower *et al.* lacks that the lens body contains a pigment with an average particle diameter of 0.01 to 2  $\mu\text{m}$  that shields visible light with the degree of dispersion R of the 0.001 to 1 mass % (or 0.05 to 2 mass %) pigment in the lens body less than or equal to 10% so that the value of the ratio  $T_i/T_v$  of the lens body is  $\geq 5$ ,  $\geq 15$  or  $\geq 150$  (*i.e.*,  $T_i \geq 5T_v$ ,  $T_i \geq 15T_v$  or  $T_i \geq 150T_v$ ).

Grossinger *et al.* teach (column 2, lines 1-20; column 4, lines 40-55) to provide a lens with pigment particles (*e.g.*, 10% or a considerably reduced pigment amount) that shields visible light (*i.e.*,  $T_v \sim 0$ ) from the sensor without distorting or attenuating infrared radiation (*i.e.*,  $T_i \sim 1$ ). Further, Silvestrini *et al.* teach (column 2, lines 50-66; column 3, lines 51-62; column 4, lines 58-65) to provide a perfect dispersion of a pigment such as 0.2% to 0.8% by weight of 0.5  $\mu\text{m}$  carbon black of the MT type in order to absorb light of less than 3  $\mu\text{m}$  wavelength. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to perfectly disperse (*e.g.*,  $\leq 10\%$  R) a 0.01 to 2  $\mu\text{m}$  pigment at 0.001 to 2 mass % (*e.g.*, 0.2% 0.5  $\mu\text{m}$  carbon black) in the lens body of Tower *et al.*, in order to shield the optically active portion of the electronic device from visible light (*i.e.*,  $5T_v \sim 0$ ,  $15T_v \sim 0$ , or  $150T_v \sim 0$ ) without distorting or attenuating the desired wavelengths of infrared radiation (*i.e.*,  $T_i \sim 1$  which is greater than  $5T_v$ ,  $15T_v$ , or  $150T_v$ ) as taught by Grossinger *et al.*

In regard to claim **34** which is dependent on claim 13, Tower *et al.* also disclose (column 3, lines 35-45, column 4, lines 44-53) that said supporting part (16, 60) is comprised of metal.

7. Claims 14 and 51-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tower *et al.* (US 6,020,628) in view of Grossinger *et al.* (US 5,712,622), Silvestrini *et al.* (US 4,323,619), and Scherber *et al.* (US 4,708,419).

In regard to claim **14**, **51**, **52**, **54**, and **55**, Tower *et al.* in view of Grossinger *et al.* and Silvestrini *et al.* is applied as in claims 13 and 45-48 above. The modified sensor of Tower *et al.* lacks a resin layer (e.g., a polyethylene layer) that covers at least the light receiving surface of the ceramic part of the lens body (12). Scherber *et al.* teach (column 3, lines 3-58) to provide a polyethylene layer overlying infrared components in order to protect the infrared components. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide a polyethylene layer overlying the lens body in the modified sensor of Tower *et al.*, in order to protect the lens body as taught by Scherber *et al.*

In regard to claim **53** which is dependent on claim 52, the modified sensor of Tower *et al.* lacks that the ratio of added amounts of said pigment B/A in the resin layer is in a range of 0.1 to 15. Silvestrini *et al.* teach (column 3, lines 1-16) to provide pigment concentrations such as 1% and 5% cobalt oxide and 0.1 and 0.5% carbonblack (i.e., a ratio of 10), so as to obtain desired optical properties. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide

pigments having a 0.1 to 15 ratio of added pigments in the lens body of Tower *et al.*, in order to obtain desired optical properties as taught by Silvestrini *et al.*

8. Claims 15, 16, 49, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tower *et al.* (US 6,020,628) in view of Grossinger *et al.* (US 5,712,622) and Silvestrini *et al.* (US 4,323,619) as applied to claims 13 and 48 above, and further in view of Carnall, Jr. *et al.* (US 3,131,238).

In regard to claims **15** and **16** (which are dependent on claim 13) and claim **49** (which is dependent on claim 48), while Tower *et al.* also disclose (column 2, lines 63-66) that the lens body is formed from any suitable ceramic or glass such that that light of a desired wavelength will pass through the lens body with minimal distortion or attenuation, the modified sensor of Tower *et al.* lacks that the main component of said ceramic of said lens body is zinc sulfide (ZnS) having  $\geq 40\%$  or  $\geq 50\%$  linear light transmittance at 8 to 12  $\mu\text{m}$  wavelength. However, zinc sulfide ceramic lenses are well known in the art. For example, Carnall, Jr. *et al.* teach (column 5, line 50 to column 6, line 62) a 1.6 mm thick zinc sulfide infrared optical element have a linear light transmittance of  $\geq 40\%$  (e.g., 75% at 8  $\mu\text{m}$  wavelength). Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention that a suitable material for the lens body of Tower *et al.* is zinc sulfide which has a linear light transmittance of  $\geq 40\%$  at a desired infrared wavelength (e.g., 8 to 12  $\mu\text{m}$  wavelength), in order to pass the desired infrared wavelength light (e.g., 8  $\mu\text{m}$  wavelength) through the lens body with minimal distortion or attenuation.

In regard to claim **50** which is dependent on claim 49, Tower *et al.* in view of Grossinger *et al.* and Silvestrini *et al.* is applied as in claim 46 above.

9. Claims 17, 18, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tower *et al.* (US 6,020,628) in view of Grossinger *et al.* (US 5,712,622), Silvestrini *et al.* (US 4,323,619), and Scherber *et al.* (US 4,708,419) as applied to claim 14 and 55 above, and further in view of Carnall, Jr. *et al.* (US 3,131,238).

In regard to claims **17** and **18** (which are dependent on claim 14) and claim **56** (which is dependent on claim 55), Carnall, Jr. *et al.* is applied as in claims 15, 16, and 49 above.

10. Claims 19, 20, 49, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tower *et al.* (US 6,020,628) in view of Grossinger *et al.* (US 5,712,622) and Silvestrini *et al.* (US 4,323,619) as applied to claim 13 above, and further in view of Roy *et al.* (US 3,974,249).

In regard to claims **19** and **20** (which are dependent on claim 13) and claim **49** (which is dependent on claim 48), while Tower *et al.* also disclose (column 2, line 63 to column 3, line 7) that the lens body is formed from any suitable ceramic (e.g., the main component is  $\text{MgAl}_2\text{O}_4$  which is also referred to as spinel) or glass such that that light of a desired wavelength will pass through the lens body with minimal distortion or attenuation, the sensor of Tower *et al.* lacks that the  $\text{MgAl}_2\text{O}_4$  lens body has  $\geq 40\%$  or  $\geq 50\%$  linear light transmittance at 3 to 5  $\mu\text{m}$  wavelength. However, the properties of  $\text{MgAl}_2\text{O}_4$  are well known in the art. For example, Roy *et al.* teach (column 5, lines 6-55)



that  $\text{MgAl}_2\text{O}_4$  has  $\geq 40\%$  linear light transmittance at 3 to 5  $\mu\text{m}$  wavelength. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention that the  $\text{MgAl}_2\text{O}_4$  lens body of Tower *et al.* have  $\geq 40\%$  linear light transmittance at 3 to 5  $\mu\text{m}$  wavelength.

In regard to claim **50** which is dependent on claim 49, Tower *et al.* in view of Grossinger *et al.* and Silvestrini *et al.* is applied as in claim 46 above.

11. Claims 21, 22, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tower *et al.* (US 6,020,628) in view of Grossinger *et al.* (US 5,712,622), Silvestrini *et al.* (US 4,323,619), and Scherber *et al.* (US 4,708,419) as applied to claims 14 and 55 above, and further in view of Roy *et al.* (US 3,974,249).

In regard to claims **21** and **22** (which are dependent on claim 14) and claim **56** (which is dependent on claim 55), Roy *et al.* is applied as in claims 19, 20, and 49 above.

12. Claims 13, 14, 23, 24, 28, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Castleman (US 6,153,881) in view of Grossinger *et al.* (US 5,712,622) and Silvestrini *et al.* (US 4,323,619).

In regard to claim **13**, Castleman discloses (Figs. 8 and 9) a sensor, having a lens body (232), comprising ceramic (*i.e.*, sapphire; column 13, lines 36-47), a supporting part (230), which supports said lens body (232), and a detection part (236), which detects the light that has been transmitted through said lens body (232). The sensor of Castleman lacks that the lens body contains a pigment that shields visible light and that the pigment in the lens body in a range of 0.001 to 1 mass % (or 0.05 to 2

mass %). Grossinger *et al.* teach (column 2, lines 1-20; column 4, lines 40-55) to provide a lens with pigment particles (e.g., 10% or a considerably reduced pigment amount) that shields visible light from the sensor without distorting or attenuating infrared radiation. Further, Silvestrini *et al.* teach (column 2, lines 50-66; column 3, lines 51-62) to provide 0.2% to 0.8% by weight of carbon black of the MT type in order to absorb light of less than 3  $\mu\text{m}$  wavelength. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide less than 10% pigment (e.g., 0.2% carbon black) in the lens body of Castleman, in order to shield the optically active portion of the electronic device from visible light without distorting or attenuating the desired wavelengths of infrared radiation as taught by Grossinger *et al.*

In regard to claim **14**, Castleman in view of Grossinger *et al.* is applied as in claim 13 above. Castleman also discloses (column 13, lines 11-20 and 36-47) a resin layer (*i.e.*, a plastic housing) that covers at least the light receiving surface of the ceramic part of the lens body.

In regard to claims **23** and **24** (which are dependent on claim 13) and claims **28** and **29** (which are dependent on claim 14), Castleman also discloses (column 13, lines 11-20 and 36-47) that said supporting part is comprised of resin (*i.e.*, plastic housing).

13. Claims 25-27 and 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Castleman (US 6,153,881) in view of Grossinger *et al.* (US 5,712,622) and Silvestrini *et al.* (US 4,323,619) as applied to claims 23, 24, 28, and 29 above, and further in view of Erismann (US 5,818,337).

In regard to claims **25** and **27** (which are dependent on claim 23), claim **26** (which is dependent on claim 24), and claims **30** and **31** (which are dependent on claim 28), claims **32** and **33** (which are dependent on claim 29), while Castleman also discloses (column 13, lines 11-20 and 36-47) a plastic housing, the sensor of Castleman lacks that the plastic is high-density polyethylene. However, plastic housings are well known in the art. For example, Erismann teaches (column 2, lines 50-62) that a plastic housing comprising lens can be formed from a plastic substantially transparent to infrared radiation such as high-density polyethylene. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide a known plastic for the plastic housing of Castleman such as high-density polyethylene which is substantially transparent to infrared radiation.

14. Claims 35, 36, and 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Castleman (US 6,153,881) in view of Grossinger *et al.* (US 5,712,622) and Silvestrini *et al.* (US 4,323,619) as applied to claims 13 and 14 above, and further in view of Adachi *et al.* (US 4,302,674).

In regard to claim **35** (which is dependent on claim 13) and claim **38** (which is dependent on claim 14), the modified sensor of Castleman lacks that said supporting part includes a cylindrical part, which is formed between the portion of said lens body that transmits light and said detection part. Adachi *et al.* teach (column 5, lines 46-58) to provide a cylindrical part in order to receive only substantially perpendicular radiation relative to the detection part. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide a cylindrical part between

the lens body and the detection part in the modified sensor of Castleman, in order to receive only substantially perpendicular radiation relative to the detection part as taught by Adachi *et al.*

In regard to claim **36** (which is dependent on claim 35) and claims **39** and **40** (which are dependent on claim 38), Castleman is applied as in claims 23 and 24 above.

15. Claims 37, 41, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Castleman (US 6,153,881) in view of Grossinger *et al.* (US 5,712,622), Silvestrini *et al.* (US 4,323,619), and Adachi *et al.* (US 4,302,674) as applied to claims 36 and 40 above, and further in view of Erismann (US 5,818,337).

In regard to claim **37** (which is dependent on claim 36) and claims **41** and **42** (which are dependent on claim 40), Erismann is applied as in claims 25-27 and 30-33 above.

### ***Response to Arguments***

16. Applicant's arguments filed 3 September 2004 have been fully considered but they are not persuasive.

Applicant argues (last two paragraphs on pg. 9 to first paragraph on pg. 11 of remarks filed 3 September 2004) that both the mechanism and the concept of the invention is completely distinct from that of Grossinger *et al.* since in accordance with the principles of the present invention, the light is efficiently absorbed by the blackish pigment as the additive or absorbed by the mixture of the blackish pigment and whitish pigment. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies

(i.e., absorbed by the pigment) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Independent claims 13 and 14 both recite the limitation "a pigment that shields visible light". It is import to recognize that shield is not the same as absorb. Therefore the features upon which applicant relies (i.e., absorbed by the pigment) are not recited in the rejected claim(s). Moreover even if applicant's argument is considered, Grossinger *et al.* state (column 2, lines 6-9) that "The pigment particles, which have substantially no effect on infrared radiation, are operative to absorb and diffuse incident visible radiation". Thus Grossinger *et al.* expressly teach a pigment that absorb visible radiation. Therefore applicant's arguments are not persuasive.

In response to applicant's argument (last two paragraphs on pg. 11 of remarks filed 3 September 2004) that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a white pigment with "good" thermal conductivity) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant argues (first paragraph on pg. 12 of remarks filed 3 September 2004) that none of the applied references alone or in combination, disclose or remotely suggest the recited pigment amounts in independent claims 13 and 14. Examiner respectfully disagrees. Grossinger *et al.* state (column 4, lines 50-55) that "For

example, if pigmentation is used, the amount of pigment can be reduced considerably, thereby enabling the use of indicator light emitting diodes (LEDs) within housing 15. The reduced pigmentation also makes the detector more durable in outdoor conditions". Thus Grossinger *et al.* teach to provide a lens with pigment particles (e.g., 10% or a considerably reduced pigment amount) that shields visible light from the sensor without distorting or attenuating infrared radiation. Further, Silvestrini *et al.* teach (column 2, lines 50-66; column 3, lines 51-62) to provide 0.2% to 0.8% by weight of carbon black of the MT type in order to absorb light of less than 3  $\mu\text{m}$  wavelength. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide less than 10% pigment (e.g., 0.2% carbon black) in the lens body of Tower *et al.*, in order to shield the optically active portion of the electronic device from visible light without distorting or attenuating the desired wavelengths of infrared radiation as taught by Grossinger *et al.*

In response to applicant's argument (second paragraph on pg. 12 of remarks filed 3 September 2004) that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Grossinger *et al.* teach to provide a lens with pigment particles (e.g., 10% or a considerably reduced pigment

amount) that shields visible light from the sensor without distorting or attenuating infrared radiation. Further, Silvestrini *et al.* teach (column 2, lines 50-66; column 3, lines 51-62) to provide 0.2% to 0.8% by weight of carbon black of the MT type in order to absorb light of less than 3  $\mu\text{m}$  wavelength. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide less than 10% pigment (e.g., 0.2% carbon black) in the lens body of Tower *et al.*, in order to shield the optically active portion of the electronic device from visible light without distorting or attenuating the desired wavelengths of infrared radiation as taught by Grossinger *et al.*

### ***Conclusion***

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

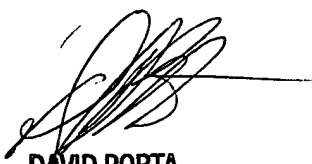
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shun Lee whose telephone number is (571) 272-2439. The examiner can normally be reached on Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SL



**DAVID PORTA**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**